

December 20, 1984

NOAA DIVING SAFETY BULLETIN #84-2

MEMORANDUM FOR: ALL NOAA DIVERS

FROM: J. Morgan Wells, N/MO15
NOAA Diving Coordinator

SUBJECT: Equipment Maintenance

Recent reports of hazardous incidents and/or equipment in hazardous condition have been brought to my attention. The reports cover a multitude of equipment problems. I am particularly concerned with the reports that involve intermediate regulator hoses and high pressure (H.P.) hoses on submersible pressure gauges. Each Unit Diving Supervisor (UDS), Divemaster, and diver is reminded that it is their responsibility, as stated in the NOAA Diving Regulations, to properly maintain their diving equipment. I interpret this to include required annual maintenance, day-to-day upkeep and the replacement of equipment that has outlived its useful life. UDS's and Divemasters should particularly note their responsibilities to insure that the proper equipment maintenance records are maintained.

The following incidents have recently been reported:

1. A NOAA Diver's intermediate hose separated from the ferrule, on the first-stage end, during a 20 foot working dive. The immediate loss of air forced the diver to perform a free ascent.
2. The intermediate pressure hose of a NOAA diver's regulator ruptured on deck while he was waiting to enter the water.

3. The intermediate pressure hose of a NOAA diver's regulator ruptured when he turned on the air cylinder.
4. In a non-NOAA incident the HP hose on a submersible pressure gauge ruptured as the diver turned on the air cylinder. The ruptured hose whipped upward striking the diver across the eye. The resulting injury caused the diver to lose 90% of his vision in one eye.
5. During an inspection of the equipment brought to recent basic class, three out of ten regulators were found to have bulges, cracks, or total separation of the braided hose from the connecting ferrule. One regulator had a BC hose and an intermediate hose that were in a deteriorated state. One hose that was inspected was found to be held together with electrical tape and wire ties. The instructors also found fins that were totally rotted and suits that were improperly fitted to the point of creating a hazardous situation.

In order to insure the safety and efficiency of our Diving Program, each diver should make an extra effort to assure the proper use and maintenance of his/her equipment.

When checking your gear before each dive, inspect the hoses before pressurizing them, and again after pressurization. If there are any bulges, nicks, or stressed points, the hose should be replaced immediately. Remember, that hidden hose deterioration can occur under your hose protector. Also, a number of the incidents that have occurred involved new hoses. The age of the hose does not necessarily preclude possible defects or damage.

Unit Diving Supervisors must insure that equipment sent with trainees to diver training programs is in proper working condition and of appropriate size.

Due to the rather high incidence of hose failures in recent years, the NOAA Diving Program has initiated a study relating to the "Burst Pressure and Breaking

Strength of Regulator Hoses (H.P. and L.P.). You are encouraged to assist in this effort by providing us with any hoses that must be removed from service. A brief history of the hose (age, nature of failure, or reason for replacement, etc.) would be of benefit.

Tagged hoses should be sent to:

Cliff Newell
Unit Diving Supervisor
Northeast Fisheries Center
NOAA-NMFS
Woods Hole, Massachusetts 02543